90. A device for developing a bore in living bone, said device comprising:

an osteotome tool having a central axis and a surface for compacting bone;

a driving mechanism including means for interchangeably coupling said driving mechanism to said osteotome tool, said driving mechanism including a piezoelectric transducer element imparting a vibrational motion to said osteotome tool; and

a power source for delivering electrical power to said driving mechanism.

91. The device of claim 90, wherein said coupling means includes means for quickly releasing and attaching said tool from said driving mechanism.

92. The device of claim 90, wherein said vibrational motion is primarily in the direction of said central axis of said osteotome tool.

93. The device of claim 90, wherein said driving mechanism includes a drive rod between said piezoelectric transducer and said coupling means.

94. The device of claim 90, wherein said driving mechanism includes a cone-shaped mechanical coupling component.

95. The device of claim 90, wherein said osteotome tool has at least one segment with a constant cross-section.

96. The device of claim 90, wherein said osteotome tool has a cross-section that increases from said lower end to said upper end.

97. The device of claim 90, wherein said coupling means is selected from the group consisting of a spring element, a pin element extending into said osteotome tool, a screw element extending into said osteotome tool, a ball-slot clamping mechanism, a ball-slide clamping mechanism, and a three jaw-chuck device.

98. A method for developing a bore in a living bone, said method comprising the steps of:

providing an osteotome tool having a central axis, a lower end, an upper end, and an engaging surface between said lower and upper ends;

providing a driving mechanism including a piezoelectric transducer element capable of producing vibrational motion;

coupling said driving mechanism to said osteotome tool; and

powering said driving mechanism to actuate said piezoelectric transducer element while engaging said living bone.

99. The method of claim 98, wherein said engaging surface has a sequence of regions from said lower end to said upper end that increase in cross-sectional area.

100. The method of claim 98, wherein said tool has regions of a constant diameter.

101. The method of claim 98, wherein said piezoelectric transducer element oscillates when electrical oscillations are produced by said electrical power.

102. The method of claim 98, wherein said vibrational motion occurs along said central axis of said osteotome tool.

103. The method of claim 98, wherein said vibrational motion has a low amplitude of less than about 1.0 mm.

104. The method of claim 98, wherein said vibrational motion has a frequency of about 500 Hz.

105. The method of claim 98, wherein said vibrational motion is varied by changes to a frequency and an amplitude of electric power supplied to said piezoelectric transducer.

106. A device for developing in living bone a bore that is defined by bone tissue with increased density, said device comprising:

a compaction tool having a central axis, a lower end, and upper end, and a bone engaging surface for displacing bone tissue that is initially in the area defined by said bore primarily in the radial direction with respect to said central axis; and

a driving mechanism including means for coupling said driving mechanism to said tool, said driving mechanism further including means for vibrationally moving said tool.

107. The device of claim 106, wherein said compaction tool is tapered from said upper end to said lower end.

108. The device of claim 106, wherein said vibrational movement is in a direction of said central axis.

109. The device of claim 106, wherein said osteotome tool has at least one segment with a constant cross-section.

110. A method for developing a bore in a living bone, said method comprising the steps of:

providing an osteotome tool having a central axis, a lower end, an upper end, and an engaging surface between said lower and upper ends;

providing a driving mechanism capable of producing reciprocating motion;

coupling said driving mechanism to said osteotome tool; and

engaging said osteotome tool with said living bone, while said osteotome tool is undergoing reciprocating motion.

111. The method of claim 110, wherein said reciprocating motion is in a direction of along said central axis.

112. The method of claim 110, wherein said osteotome tool simultaneously engages said living bone substantially along an entire length of said bore.

113. The method of claim 110, wherein said osteotome tool is tapered from said upper end to said lower end.

114. The method of claim 110, wherein said osteotome tool incrementally compacts said living bone while developing said bore.